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VIII*—ARISTOTLE'S DEFINITIONS OF *PSUCHE*

by J. L. Ackrill

In spite of the doubt he expresses as to the possibility or usefulness of giving a general definition of *psuche* Aristotle does offer such a definition in *De Anima* II.1; indeed he offers three. In this paper I wish to develop (in a simple, if not indeed simple-minded, way) a main difficulty his formulae seem to involve, and to enquire into the root of the difficulty.

1. Aristotle's three formulae are:

- (a) 'form of a natural body that has life potentially';
- (b) 'the first actuality of a natural body that has life potentially';
- (c) 'the first actuality of a natural body that has organs'.

What relation between *psuche* and body is here intended? In his justly admired monograph *Identity and Spatio-Temporal Continuity* Professor David Wiggins suggests that 'the only logically hygienic way of sorting out Aristotle's analogy' is to take '[living] body: soul' as equivalent to 'flesh and bones: person'.¹ He offers Aristotle an interpretation of 'form' (or 'actuality') that makes form that which the matter constitutes: this wood, iron, etc. is an axe; this flesh and bones is a person. 'What we have done here is in effect to rediscover the "is" of constitution'.

I said that Wiggins *offers* Aristotle a certain interpretation. Indeed he argues that Aristotle must, if pressed, accept it. He does not, I think, claim that this is what Aristotle really meant; and he allows that 'Aristotle would insistently repudiate this whole line of argument'. Let us then consider what Aristotle

*Meeting of the Aristotelian Society at 5/7, Tavistock Place, London, W.C.1, on Monday 12th February 1973, at 7.30 p.m.

¹ P. 48. I do not apologise for devoting some space to Wiggins's suggestion. I think that it is wrong, and that in general his paraphrases and interpretations of Aristotle are open to serious criticism. But his book is subtle and stimulating, and every part of it deserves careful consideration.

does mean and whether he is open to the logical pressure Wiggins seeks to exert.

In the *Categories* Aristotle treats individual things as the basic entities—'primary substances'—and their *species* and *genera* as secondary substances. In later works he uses the distinction between matter and form in order to explain what an individual thing is. Here is a bronze sphere; we can distinguish what it is made of (bronze) from what makes that stuff a bronze sphere (sphericity). Aristotle regularly distinguishes form, matter, and 'the composite'. The last is the actual ('separable') thing, and to speak of form and matter is to speak of the form and the matter *of* such a thing. Whatever the obscurities or gaps in this Aristotelian account it is surely clear that he has discovered 'the "is" of constitution'. Consider the following:

(1)	(2)	(3)
bronze	sphericity	a bronze sphere
wood and iron	ability to chop	an axe
bread and cheese	a certain arrangement	a sandwich
bricks and timber	ability to shelter	a house.

An item designated under (1) is (constitutes) an item under (3) if it has the form (shape, character, power) indicated under (2). Under (1) will normally be found material- or stuff-words; under (3), sortals; and under (2), names or descriptions of properties, structures, powers, and the like.³

We need not, then, doubt that the 'is' of constitution is a main weapon in Aristotle's armoury. But it is equally clear that he does not think or wish to suggest that a body—or flesh and bones—*constitutes* a *psuche*. For he quite consistently applies the above triadic scheme in the following way:

(1)	(2)	(3)
body	<i>psuche</i>	animal

An animal, he is always saying, is (or is made up of) *psuche* and body. Strictly the same is true of a plant, since a plant is *empsychon* (living). If we confine ourselves to *man* we have the triad 'body, *psuche*, man'. What makes a body a man is its having *psuche* (its being *empsychon*). It would make no more sense to say

³ Notice that the form can equally well be called the form of the matter or the form of the composite: two aspects of the actual thing may be contrasted, or one aspect may be picked out.

that a man is a *psuche* than to say that an axe is an ability to chop. An item under (1) constitutes an item under (3) in virtue of its possession of the item under (2); part of the point of the triadic scheme is to *contrast* the terms *psuche* and *man* (or *animal* or *plant*).

How then does Wiggins come to think that Aristotle can be forced to a quite different account, one which actually identifies *psuche* with *man* (or *person*)? Let us examine what he says (in note 58) in direct reply to an account like that just given. The following sentences contain the gist of Wiggins's argument. 'Aristotle gives the form of axe as *chopping* and that of eye as *seeing* They [these concepts] come to much the same as *being an axe* or *being an eye*, but they are not strictly the same concepts as the concepts *axe* and *eye*.' 'There is an *f* such that in virtue of *psuche* Kallias is a particular *f*. What value can *f* take? *Chopping* makes this an *axe*. *Psuche* makes Kallias a *what*? . . . If the answer be *man* that is fine, but if the form *axe* makes this particular axe this *axe*, surely *psuche* makes Kallias this particular *psuche*. And for Kallias then, *psuche* and *man* must come to the same. The resolution which I shall offer Aristotle is precisely this—that the particular *f* is *this particular psuche* or, equally good, *this particular man*.'

Now Aristotle certainly would give to Wiggins's question the answer 'a man'. Wiggins's claim that this commits him to equating *psuche* and *man* depends upon the supposition that 'the form *axe* makes this particular axe this *axe*.' This presumably derives from the earlier passage where he says (a) that Aristotle gives the form of axe as *chopping*, and (b) that this concept comes to much the same as *being an axe*, although (c) it is not strictly the same concept as the concept *axe*. But (a) is incorrect, since it is not *chopping* but the *power* to chop (or, in the case of the eye, to see) that is the form or 'first entelechy'. Chopping and seeing correspond to being awake; what corresponds to being alive (*empsychon*) is being able to chop and having sight (*De Anima* 412b27-413a1). (b) is also unacceptable. *Chopping* and *being an axe* are obviously quite disparate concepts. But even the *power to chop* (which is what Aristotle actually gives as the form of *axe*) and *being an axe* are, though intimately related, easily distinguishable. Aristotle himself noted in the *Categories* that 'being deprived and possessing are not privation and possession . . .

Having sight is not sight nor is being blind blindness.' 'The power to chop' and 'being able to chop' are not interchangeable expressions. Nor, moreover, are 'being able to chop' and 'being an axe': the former can, as the latter cannot, occur in a helpful answer to the question what makes this iron thing an *axe*. Finally, the admission in (c) is itself sufficient to destroy the argument Wiggins uses later to force on Aristotle the equation of *psuche* and *man*. For if it is not after all the form *axe* (strictly speaking), but the form *being an axe* (or *being able to chop* or *the power to chop* or . . .), that makes this an *axe*, there is not the slightest presumption that the form *psuche* makes Kallias a *psuche*.

What Aristotle says about axes is that some wood and iron (matter) constitutes an axe (composite) in virtue of its having the power to chop (form). Similarly, some part of the body is an eye because it has sight; and the body as a whole is a man because it has certain living powers, *psuche*. *Psuche* is the power a body must have if it is to be a man, as sight and the power to chop are what objects must have to be eyes or axes. There seems to be no justification for the suggestion that Aristotle either does or must identify *man* and *psuche*.

It may be worth making two further remarks here to avert misunderstanding. First, it is of course true that Aristotle often speaks of man (horse, etc.) as an *eidos*, and that this is the very word translated 'form'. What is involved here, however, is not an implied identification of *man* with *psuche* (his form), but a variation in the use of the term '*eidos*'. To speak of ambiguity might well be misleading, for the connexion between the two uses is exceedingly close. Nevertheless one can say that in some contexts '*eidos*' means 'form' and in others 'species'. The context usually makes perfectly clear which it means, but where necessary Aristotle adds a phrase to put it beyond doubt. Thus '*eidos* of a genus' (e.g., *Met. Z.4.1030a12*) plainly means 'species', whereas in '*eidos* and shape' (e.g., *De An. II.1.412a8*) and 'actuality and *eidos*' (e.g., *Met. H.3.1043a32*) 'form' is clearly intended. So the double use of the word '*eidos*' is no reason for confusing—or supposing that Aristotle confuses—form with species, or, more generally, form with composite substance.

Secondly, Aristotle says, especially in *Met. Z*, some difficult things about 'what-it-is-to-be-*X*'. The following will serve as a

rough but sufficient reminder. To ask why an *X* is an *X* is, according to Aristotle, to ask why certain specified matter is (constitutes) an *X*; and to answer such a question one must give the form of *X*. The form is thus the 'what-it-is-to-be-*X*'. Not, of course, that an *X* is *identical* with its form—an *X* is a composite of form and matter.³ But the form is what the matter has to get or have if it is to become or be an *X*; for the matter, to become or to be an *X* is precisely to get or to have the form. Now if an expression '*E*' designates a form and not a composite there is of course no question corresponding to the question why an *X* is an *X* as construed above, and hence no clear meaning for the expression 'what-it-is-to-be-*E*'. Aristotle puts this contrast rather misleadingly when he says (in effect) that *X* is not identical with what-it-is-to-be-*X*, whereas *E* is identical with what-it-is-to-be-*E*. This last is misleading because it suggests what it is designed to deny, that *E* is the sort of term to which an analysis into matter and form can be applied. *X* must be distinguished from its formal defining character *E*; but *E* is neither the same as nor different from *its* formal defining character, since it is (and does not *have*) a form.

Aristotle thinks that it is not always obvious whether a word '*W*' signifies, or on some occasion is used to signify, a composite or a form. He points out that in such a case one cannot give an unqualified answer to the question 'Is *W* identical with what-it-is-to-be-*W*?' For if '*W*' signifies a composite, the answer is 'no', if a form, the answer is 'yes'. The examples Aristotle usually has in mind seem to be geometrical ('circle'); but he also makes his point by reference to 'man'. He says: 'For "soul" and "to be soul" are the same, but "to be man" and "man" are not the same, unless indeed the soul is to be called man; and thus on one interpretation the thing is the same as its essence, and on another it is not' (*Met.* H.3.1043b2-4). What Aristotle alludes to here, and in one or two other places, is the possibility that 'man' may sometimes be used to designate not, as usual, the

³ One can, of course, ask 'What is it for something to be an *X*?' and expect the answer to mention matter as well as form. Aristotle is well aware of this and indeed often asks and answers such questions. But his use of phrases like 'what-it-is-to-be-*X*' derives not from *this* question but from that indicated in the text. To put it otherwise, it depends upon the constitutive use of 'to be'—'these bricks *etc.* are a house'—and not upon the classificatory use—'the thing in the drawer is a typewriter'.

composite of matter and form but the form alone, *i.e.*, *psuche*. It is far from clear what he has in mind. What is clear and immediately relevant is that the passages in question are few, whereas he constantly and systematically *contrasts* man as composite with *psuche* as form. Moreover it is in the context of the distinction between *psuche* and body that reference is made to a possible use of 'man' as equivalent to '*psuche*': the use envisaged is not a use of '*psuche*' to stand for the composite, but a use of 'man' to stand for the form. In other words, if one did use 'man' to stand for the form, to say of a body that it was a man would precisely not be to say what it *constituted*. This option therefore would not serve Wiggins's purpose.

2. Can we then say that Aristotle's account of *psuche* stands in no need of any 'sorting out', that it is already 'logically hygienic'? Hardly. For it is not clear how the notions of form and matter or of actuality and potentiality are in this case to be understood. They normally find application where the relevant matter (or what is potentially an *X*) can be picked out and (re-) identified in both an unformed and an in-formed state (or both as potentially and as actually an *X*). Take first the concepts of form and matter. They are introduced by Aristotle to explain change. Certain matter or material can be shaped or otherwise worked on (given a form) and made into a so-and-so (the composite). In the simplest type of example the material of which the composite is made is the very same material from which it was made; and the same material will survive the destruction of the composite. We can of course distinguish form from matter in regard to things we have not made and things which may escape dissolution as long as we like to think; but in making the distinction we are implying the possibility of this material's not always having been (and not always going to be) in-formed in this way. In order that the matter-form distinction should be clearly applicable to anything, that a thing should be capable of being seen as a composite of matter and form, it is necessary that the material constituent should be capable of being picked out. 'Constituent' is no doubt an unhappy word: it is because matter and form are not, in the ordinary sense, constituents that no question arises as to how they combine into a unity. We might speak of the material

'aspect'. To speak of a composite *qua* material or in its material aspect is to refer to some material whose identity as that material does not depend on its being *so* shaped or in-formed.

It is less easy to regard actuality and potentiality as two 'aspects' of an actual thing. For to say that something is potentially an *X* seems to exclude its now being actually an *X*. Aristotle distinguishes two very different types of case in *Met.* 9.6. (a) Unwrought material is potentially a statue, after the sculptuor's work it is actually a statue. Now in the statue matter and form can be distinguished, and it seems to Aristotle not unnatural to speak of the matter as potentiality (it is after all what was capable of receiving the form) and the form as actuality (it is what had to be imposed on the matter if there was to be an actual statue). Thus 'potentiality' and 'actuality' can come to be used not only for successive phases but also for aspects of the composite which are present simultaneously; but this is only because of reliance on the idea of the matter as it was before being in-formed. This notion of compresent potentiality and actuality involves the assumption that the material of the actual thing was not always, or at least need not have been, in-formed in *this* way. (b) The other type of case is that in which a power or disposition is contrasted with its actualisation. What is implied in talk of powers or dispositions is closely analogous to what was implied in talk of matter. A particular performance displays or manifests a power or disposition that could have been present before this performance (and usually was) and can survive it (and usually will). Where '*dunamis*' means 'power' *dunamis* at *t* is not incompatible with actual exercise of *dunamis* at *t*. Power is displayed in the exercise of it (whereas mere potentiality gives way to its actualisation).

It seems then that both the matter-form distinction and the potentiality-actuality distinction (in the two types of case just mentioned) depend upon the idea that something that is actually the case might not have been: this stuff might not have been so arranged, the capacity being now displayed might have remained undisplayed. 'It is the nature of matter to be capable both of being and of not being <such and such>' (*Met.* Z.15 1039b29).

The problem with Aristotle's application of the matter-form distinction to living things is that the body that is here the

matter is itself 'already' necessarily living. For the body is this head, these arms, *etc.* (or this flesh, these bones, *etc.*), but there was no such thing as this head before birth and there will not be a head, properly speaking, after death. In short—and I am of course only summarising Aristotle—the material in this case is *not* capable of existing *except* as the material of an animal, as matter *so in-formed*. The body we are told to pick out as the material 'constituent' of the animal depends for its very identity on its being alive, in-formed by *psuche*.

There is a parallel difficulty with the notions of actuality and potentiality. Aristotle characterises the animal's body as 'potentially alive' and as 'having organs'—such organs, clearly, as eyes, hands, heart *etc.* But to be such an organ is to have a certain power [as the eye has sight, *De An.* II.1.412b18-22], and to be a body with a set of organs is to have certain powers—nutritive, perceptual, locomotive, *etc.* There is of course such a thing as the actualisation of any of these powers—their exercise on particular occasions; but it is not to that that Aristotle is referring when he calls *psuche* 'the first actuality of a natural body that has organs'. He calls it the *first* actuality precisely to make clear (as he explains) that what he is trying to define is the life that a living creature has even when completely dormant, not active waking life—that would be the *second* actuality. If being alive, whether for an organ or for a whole body, is having certain powers (not necessarily exercising them) and to be an organ or a human body is to possess such powers, no distinction can be drawn for organs and bodies between their being potentially alive and their being actually alive. They are necessarily actually alive. If they lack the relevant powers they are just not organs or human bodies; if they have them they are *eo ipso* alive.

To sum up, Aristotle's definitions of *psuche* resist interpretation because (i) the contrast of form and matter in a composite makes ready sense only where the matter can be picked out in such a way that it could be conceived as existing without that form, but (ii) his account of the body and bodily organs makes unintelligible, given the homonymy principle, the suggestion that this body or these organs might lack or have lacked *psuche*. The complaint is not that Aristotle's concept of matter and form commits him to the impossible notion that what has form must

lack it—that the same matter both has and has not the form; but that it commits him to something that he cannot allow to be possible in the case of living beings, namely that what has form might have lacked it—that the same matter both has and might not have had the form.

3. What is the root of the difficulty? Is there something special about the concept of *living thing* that makes it recalcitrant to Aristotle's treatment? Or ought he just to give a different account of the matter of which *psuche* is to be the form?

(A) It might be suggested that Aristotle could evade the difficulty simply by dropping the homonymy principle at least as regards living versus dead (or severed) organs or bodies. He could then allow an animal's 'organic body' after death to count still as a body (and the same body), and a dead or severed hand to count still as a hand (and the same hand). He would thus be able to give good sense—as we have demanded that he should—to the idea that this body, which is in fact living, *might not* be living; one day indeed it will certainly not be.

There are various ways in which this suggestion could be understood, but I shall mention only one. It involves raising a question about the interpretation of the homonymy principle. Let it be granted that if an organ *O* or a tool *T* is by definition something capable of performing a certain function, then it would in losing this capability cease to be an *O* or a *T* strictly speaking. (It might be a broken or a ruined *T*, but not therefore a *T simpliciter*.) But what counts as 'losing' the capability? Aristotle's position is not entirely clear. Consider first a blunt axe that can perfectly well be re-sharpened. Has this 'lost' its capacity in the required sense? It would seem more natural to hold that it is a permanent loss of power, not a temporary disorder or malaise, that causes an axe to be no longer an axe strictly speaking. Aristotle does not tell us what his principle requires us to say about a blunt axe, only what to say about an axe that has 'lost' its capacity. (Have I lost my pen if I've only mislaid it?) Consider next a faultless carburettor that has been taken from the car and lies on the bench. Is it disqualified from counting as a carburettor (strictly) because it

cannot in this condition⁴ inject fuel? Is a newly-made rudder not yet a rudder (strictly) because not yet installed in a boat? Aristotle argues warmly (in *Met.* Θ.3) against those who refuse to ascribe a power to anything unless it is actually being exercised. But his own account signally fails to make plain which of the circumstances and conditions that are necessary conditions of a thing's exercising a power are also necessary conditions of its simply having the power. A carburettor cannot inject fuel when dismantled; but are we therefore to say of a dismantled carburettor that it cannot inject fuel?

Because Aristotle does not discuss whether or how the homonymy principle applies to the blunt axe and the dismantled carburettor it is impossible to decide what he would say if confronted, as he might be today or tomorrow, with severed but re-usable limbs and organs or dead but revivable bodies. By the same token we cannot be sure whether to take him to be making a conceptual claim or asserting a depressing empirical proposition when he says (at *Cat.* 13a 34-36) that 'one who has gone blind does not recover sight nor does a bald man regain his hair nor does a toothless man grow new ones'.

Here then is one suggestion we can offer Aristotle: that he should maintain the homonymy principle in a form that would not prevent a blunt axe and a dismantled carburettor from counting as an axe and a carburettor (strictly speaking), and that he should recognise as a possibility the re-use of severed organs and the re-activation of dead bodies. I am sure that this suggestion does not go to the root of the problem. But it would be a mistake to dismiss it off-hand on the ground that talk of reviving a dead body is simply contradictory, or on the ground that what Aristotle was seeking to elucidate was the old-fashioned concept of life and not the rather different one that after future medical advances our grandchildren may have.

(B) Could not Aristotle take as matter not the body as a set of organs but the body as made up of certain stuffs? The dead or severed hand is still, is it not, the same *flesh and bones*? Professor Wiggins is happy about this, treating flesh and bones as parallel

⁴ Perhaps 'in this condition' is a bad phrase. What we are considering now is not a faulty state of the object but its separation from the environment that provides it with the opportunity to function.

to the iron of which an axe is made. *His* only difficulty is over the competition that, as he thinks, arises for possession of the matter: this flesh and bones constitutes a human body, but also a person; and these (he argues) have different principles of individuation.

There certainly are places where Aristotle treats flesh and bone as matter in contrast to anhomoeomerous parts. 'The matter for animals is their parts—the anhomoeomerous parts for every whole animal, the homoeomerous parts for the anhomoeomerous, and those bodies we call elements for the homoeomerous' (*G.A.* I.1.715a9-11). 'The homoeomerous bodies are composed of the elements, and serve in turn as material for all the works of nature' (*Meteor.* IV.12.389b26-28). Where Aristotle discusses problems about form and matter in connexion with man he commonly mentions flesh and bone as matter rather than limbs and organs. See for example *Met.* Z.8.1034a6, I.9.1058b7, and Z.10-11—where it is instructive to notice that Aristotle mentions *organs* when arguing that form cannot be defined without reference to material parts, but *homoeomerous* parts when advancing the opposite point of view.

Nevertheless Aristotle regularly maintains that flesh and bone are defined by the work they do, and that therefore in a dead body they are only homonymously called flesh and bone. Thus in *Meteor.* IV.12, after he has spoken of organs and tools—'all are defined by their function'—and has explained that the sightless eye or the wooden saw is an eye or a saw only homonymously, he goes on: 'So also with flesh; but its function is less obvious than that of the tongue' (390a14-15). Again, in *De Gen. et Corr.* I.5: 'That growth has taken place proportionally is more obvious as regards anhomoeomerous parts like the hand. For there the fact that the matter is distinct from the form is more obvious than in the case of flesh and the homoeomerous parts. That is why one would be more inclined to think that in a dead body there was still flesh and bone than that there was still a hand or an arm' (321b28-32). In *G.A.* II.1 a contrast between homoeomerous and organic ('instrumental') parts is combined with an insistence that the former too have a function and that the homonymy principle applies to both equally: 'For it is not face nor flesh unless it has soul: after their death it will be equivocal to say that the one is a face and the other flesh, as it would

be if they were made of stone or wood. The homoeomerous parts and the instrumental parts are produced simultaneously. We would not say that an axe or other instrument was made by fire alone: no more would we say it of hand or foot. The same applies to flesh, for it too has a certain function' (734b24-31, tr. Balme).

If then flesh and bone, properly so-called, are necessarily living—or parts of what is living—to take them rather than eyes, hands, *etc.* as the 'matter' of an animal does not avoid the basic difficulty. The parallel with the iron of an axe is inexact. For though an axe must be made with iron (material with certain powers) iron can exist otherwise than in axes, whereas flesh is by definition in a living thing. We cannot therefore take much comfort from Wiggins's assurance: 'Of course we can specify the matter as "this flesh and bones"'. Nor, by way of compensation, need we worry about his problem—how flesh and bones can be (constitute) a living body *and* a person. For this is not a problem for Aristotle, who holds that to be a person (a man) is to be a living body (of a certain sort). Wiggins's problem arises from his ill-advised suggestion that '*psuche*' means 'person' ('For our purposes it will not do very much harm to think of *psuche* as much the same notion as *person*', p. 46). The real difficulty for Aristotle is not how it can be true both that this flesh and bones constitutes a living body and that this flesh and bones constitutes a man (or a person); it is how it can be illuminating to say *either* of these—essentially equivalent—things if flesh and bones can occur only as constituents of living bodies.

(C) If neither the anhomoeomerous parts nor the homoeomerous parts of bodies seem able to play successfully the rôle of matter, because they are inseparable from *psuche*, might inanimate materials like the four elements do better? Aristotle does of course think that the bodies of animals and plants are, like every other material thing, made up ultimately from the elements. In some places he actually refers to them as the 'matter' correlative to the form of man (*e.g.*, *Met. A.5.1071a14*); and he often mentions them by way of material cause when contrasting this with the formal or final cause. Nevertheless it is really quite clear that he would not be willing to say that a human body is (is made of) earth and water, or that the elements

are potentially men. They are altogether too remote. In *Met.* ⑨.7 Aristotle raises the question *when* something is potentially so-and-so: '*E.g.*, is earth potentially a man? No—but rather when it has already become seed, and perhaps not even then . . . A thing is potentially all those things which it will be of itself if nothing external hinders it. *E.g.*, the seed is not yet potentially man; for it must be deposited in something other than itself and undergo a change. But once it has through its own motive principle got such and such attributes, then it is potentially a man' (1049a1-16).

If earth *etc.* are too remote to count as the matter of a human body, could they count as the matter of the *lowest* kind of living thing, plants? Does Aristotle's difficulty arise from the attempt, whose feasibility he himself casts doubt on, to give a *general* account of *psuche*? Certainly he holds both that the different 'souls' or living powers form a logically developing series and that in the development of a man one power precedes another. For example, *G.A.* I.3.736a32-b8: 'One could not class the foetus as soulless, in every way devoid of life; for the seeds and foetuses of animals are no less alive than plants, and are fertile up to a point. It is plain enough that they have nutritive soul . . . , but as they progress they have also the perceptive soul in virtue of which they are animal For they do not become simultaneously animal and man, or animal and horse, and so on; for the end is the last to be produced, and the end of each animal's generation is that which is peculiar to it' (tr. Balme, *cp.* 736b13, 778b32-779a2). So it would make sense to say of a human body that it might have failed to grow to maturity, that it might have remained at the merely vegetable or merely animal stage. That a given body has *this psuche* (the human) is contingent if it might have failed to develop beyond the animal stage.

It is quite likely that careful study of Aristotle's views on the actual processes of generation and growth would throw new light on some of his general doctrines. But talk of the lower forms of life or of early phases in a man's life cannot diminish our main difficulty. For even if plants and human embryos are 'nearer' to earth and water than men are, they are nevertheless alive; and for them too, therefore, the 'body potentially alive' of Aristotle's definition must be not earth and water but plant-fibre *etc.* and flesh *etc.* Aristotle himself insists in an important

passage of *De. An.* II.1 that 'it is not the body that has lost the *psuche* that is "potentially such as to be alive", but *the body that has it*; a seed and a fruit is potentially such a body' (412b25-27, cp. *G.A.* II.3). Seeds *etc.* are not yet 'potentially alive' in the sense this expression has in Aristotle's definition of *psuche*, though they are potentially—they will with luck grow into—bodies that are potentially alive, bodies, in fact, of plants or animals. Until there is a living thing, then, there is no 'body potentially alive'; and once there is, its body is necessarily actually alive.

4. It would clearly be wrong to say that the concepts of matter and form, or of potentiality and actuality, are improperly transferred by Aristotle from the account of process and change to the analysis of substance concepts. For they are perfectly clear and helpful analytic tools in many cases, even if their understanding and application does depend on presuppositions about change. The question is why they cause trouble else-where. I will end by mentioning two directions in which it may be useful to look.

We may be struck by the fact that artefacts provide the easiest and most straightforward examples of things whose ingredients or components evidently retain their character or identity from before (and also after) the 'lifetime' of the things. But not everything we can make is like this. The timber, hinges, and screws can still be seen when the cupboard is built, but the eggs and sugar are lost in the cake. If, as a result of cooking, *a* and *b* combine to form the homogeneous stuff *c*, *a* and *b* are no longer there to be picked out. We can refer to the *a* and *b* we started with, and perhaps we can recover the *a* and *b* again by some process. But *a* and *b* are present now, if at all, only potentially. Actual bricks constitute an actual wall, though those very same bricks might not have done so. But here is quite a different story: potential *a* and *b* are 'in' actual *c*, though they might have been actual *a* and *b*. Chemical change, in short, which yields a new sort of stuff, cannot easily accommodate an account tailor-made for other operations. (Compare the constant but often misleading use of mechanical terms and analogies for biological processes and events.) This is the difficulty for Aristotle with the basic living materials such as flesh and bone. They are produced, as he explains in detail in the biological works, by processes like cooking; and they have

powers and characteristics that, though explicable by reference to the powers of their ingredients, are new, emergent powers and characteristics.

This then may be one fairly deep source of trouble. Where things or materials are produced, whether in nature or by technology, by chemical action, the matter-form analysis is in difficulty. One can refer to the material that by such and such a process *became* this (and perhaps may be recovered *from* this); but this will not explain what it is that *is* this.

A second point, related but distinct, is this. Once Aristotle moves from examples like *bronze sphere* he gets to things that have functions, that can do specific jobs. As is well known, he likes to identify the 'end' or 'final cause' of an object with its essence or 'formal cause' (e.g., *Phys.* II.7.198a25). But this creates a problem. For the job to be done determines the shape or structure or proportions as well as the material ingredients of the thing; and the thing's ability to do its job depends not only on what it is made of but also on shape, structure, etc. The thing's ability to do a certain job is not *identical with* its shape, structure, etc. So if this ability (*A*) is treated as the form of a functional object, what are we to count as its matter? If the ingredients alone, what has become of the shape, structure etc. (the original paradigm of form)? But if the ingredients plus shape etc., i.e., the materials thus organised, then the matter (so understood) *necessarily* has *A*. Powers are surely consequential attributes in the sense that if one object has a power that another lacks this must be due to some other difference, an 'internal' difference of composition or structure. Aristotle would not, I think, wish to entertain the idea that two things might have different powers without their being any basis for this difference in their material constitution.

Here, therefore, is another source of trouble. A thing's power is not related to its material constitution (ingredients plus structure) in the same way in which a thing's structure is related to its ingredients; and the distinction between matter and form that works for ingredients and structure cannot be expected to do so for constitution and power. Somewhat the same may be said of potentiality and actuality: it is easy to distinguish the possession of a power from its exercise, but not easy to construe the possession of a power as itself the exercise of one.